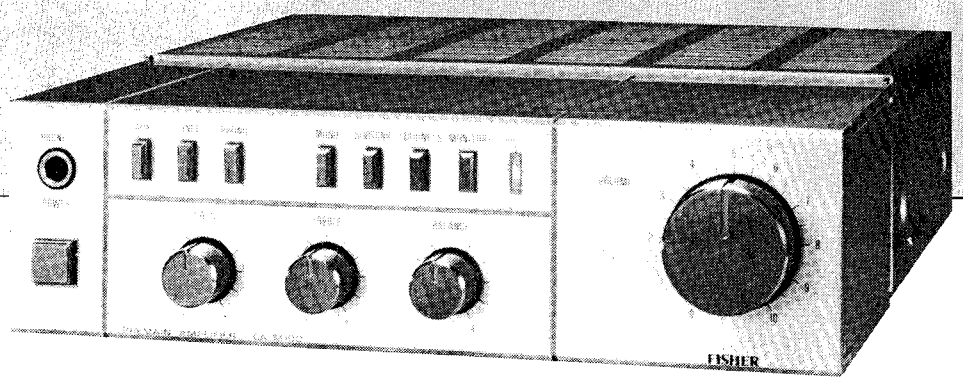
SERVICE MANUAL

FISHER

CA-M100

PRE/MAIN AMPLIFIER



THE FIRST NAME IN HIGH FIDELITY

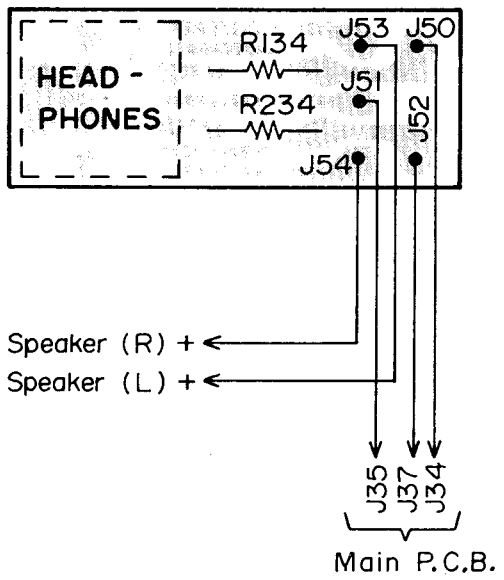
SPECIFICATIONS

Output power (T.H.D. 0.05% at 8 ohms)	20 W/CH
T.H.D. (1 kHz, 50mW—20W)	0.05%
Damping factor	50
Frequency response (50 mW)	20—20 kHz, ±1 dB
Input sensitivity Phono (MM) tuner Tape Aux	 2.5 mV/47 k ohms 150 mV/47 k ohms 150 mV/47 k ohms 150 mV/47 k ohms
Treble	±10 dB
Bass	±10 dB

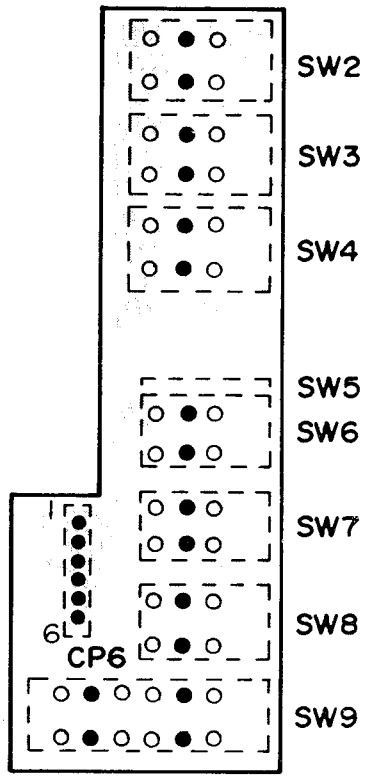
Loudness (−30 dB) (100 Hz/10 kHz)	+8 dB/+4 dB
Subsonic filter (5 Hz/10 Hz/20 Hz)	−15 dB/−8 dB/−3 dB
Output sensitivity Tape Headphones	 150 mV/1 k ohms 3 V/100 ohms
Crosstalk (1 kHz) Phono Aux	 50 dB 55 dB
S/N ratio (Rating output) Phono Aux	 70 dB 85 dB
Dimensions	220(W) x 65(H) x 250(D) mm
Power supply	AC 120/220 V, 50 Hz

WIRING DIAGRAM

HEADPHONE P.C.B. Bottom

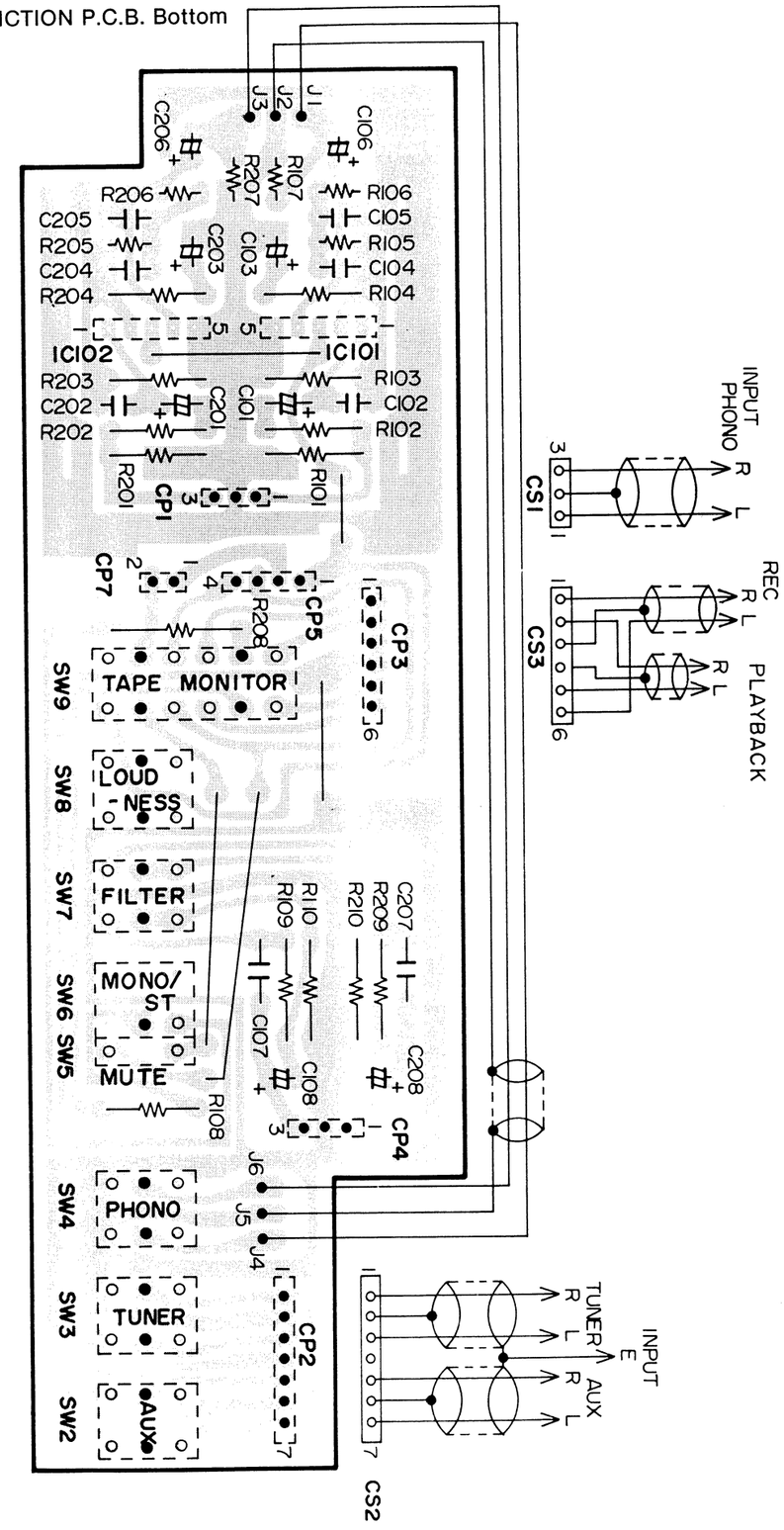


SWITCH P.C.B.

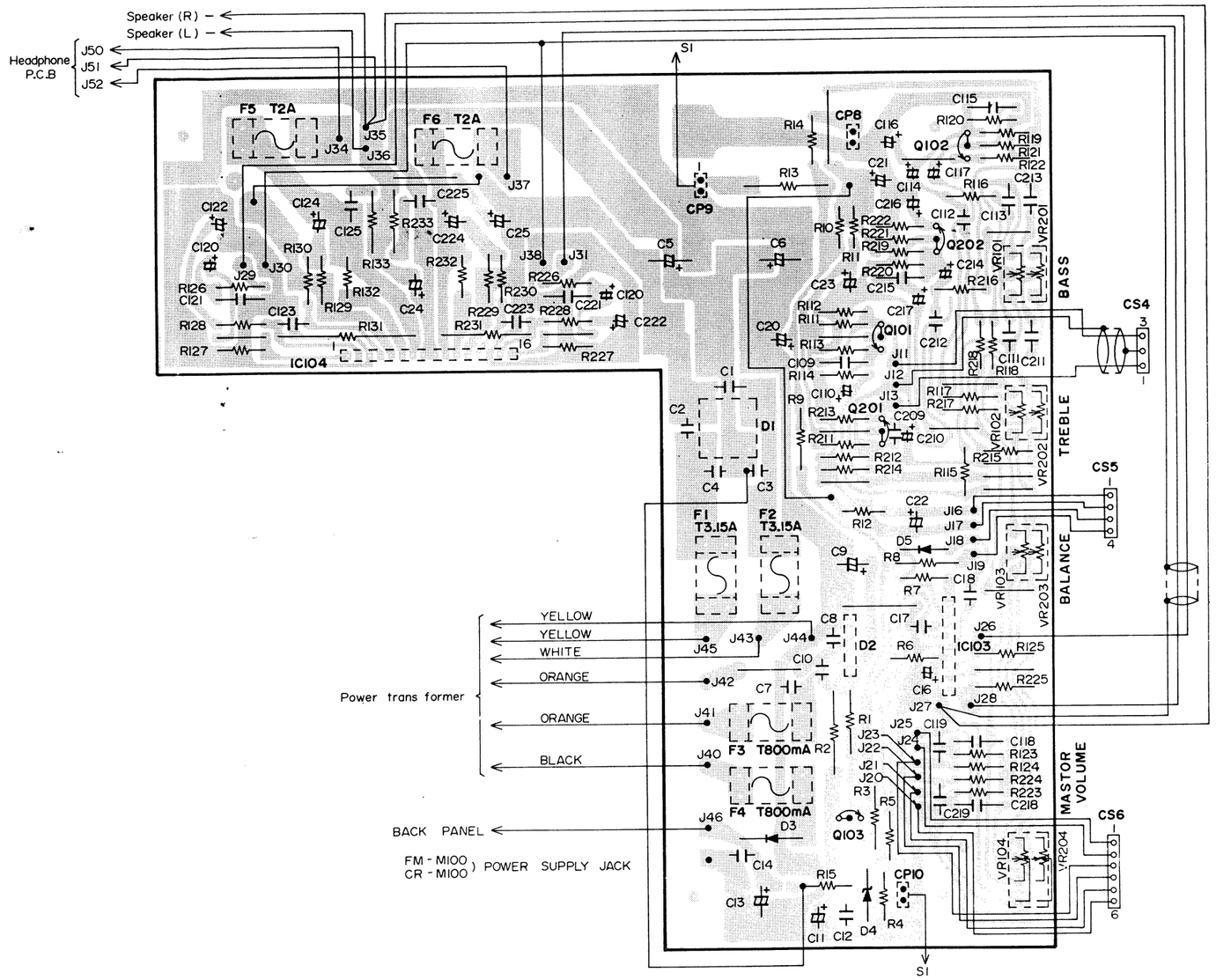


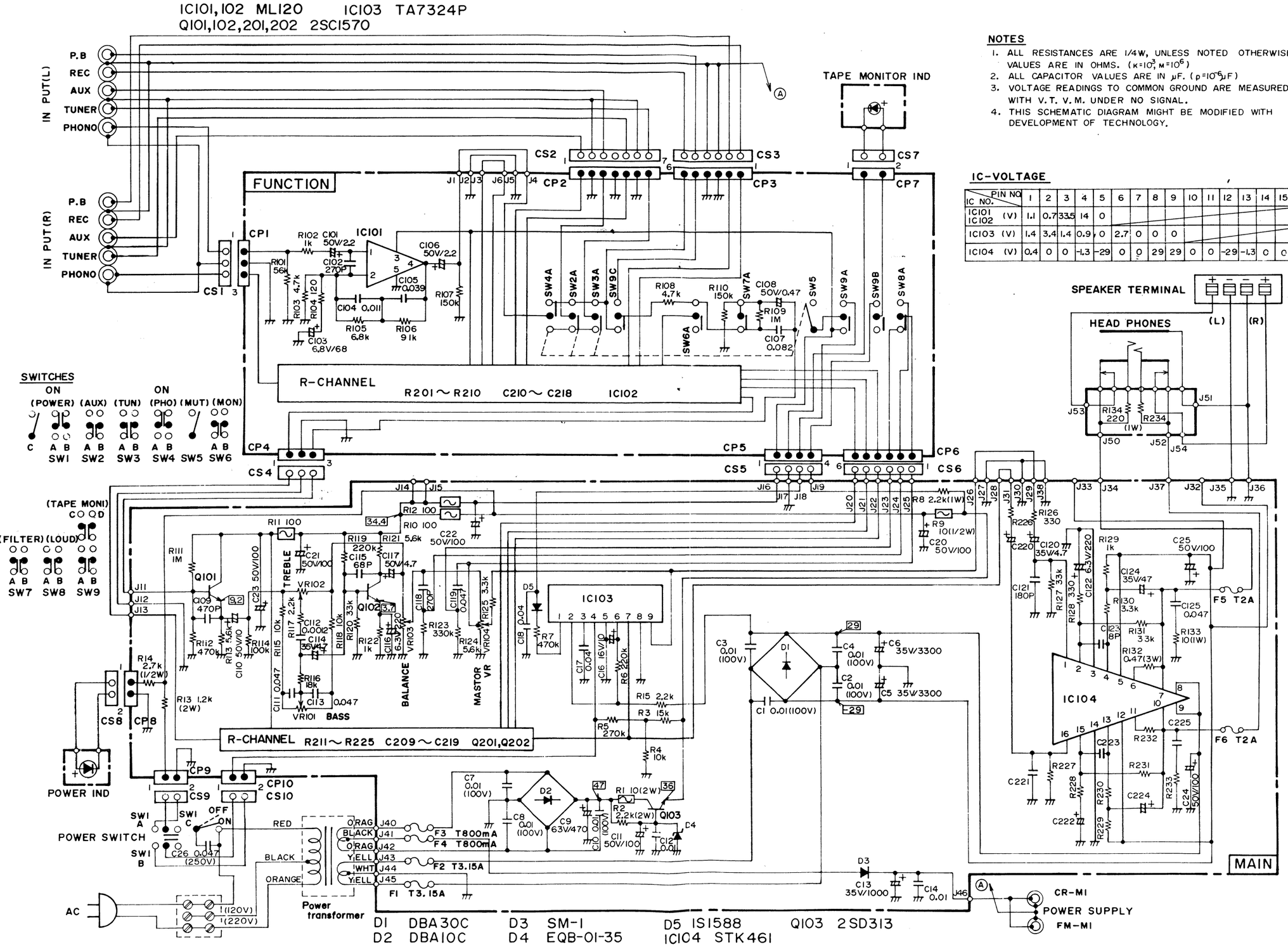
WIRING DIAGRAM

FUNCTION P.C.B. Bottom



MAIN P.C.B. Bottom





D1 DBA30C D3 SM-1 D5 IS1588 Q103 2SD313
D2 DBA10C D4 EQB-01-35 IC104 STK461

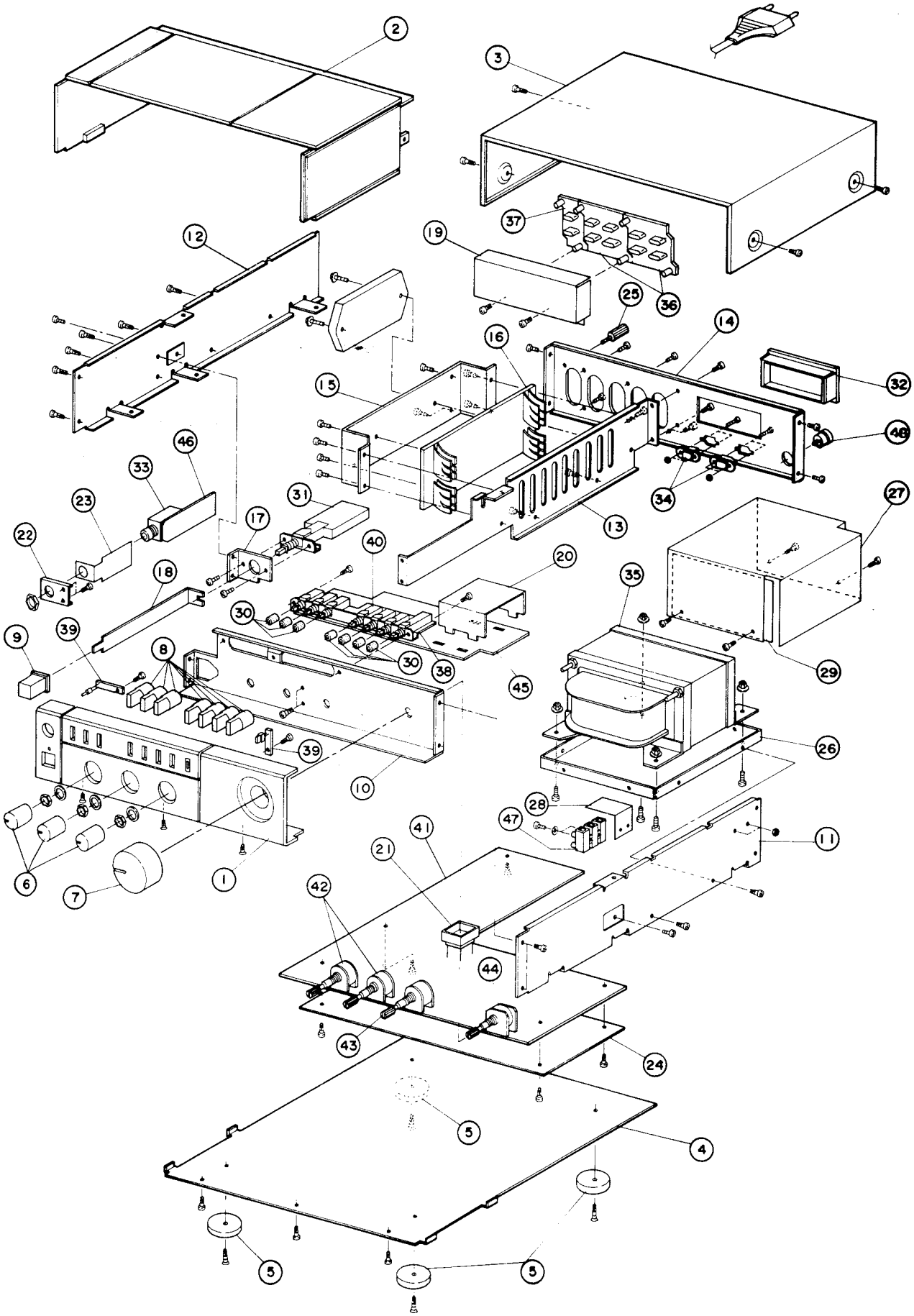
NOTES

1. ALL RESISTANCES ARE 1/4W, UNLESS NOTED OTHERWISE VALUES ARE IN OHMS. ($K=10^3$, $M=10^6$)
2. ALL CAPACITOR VALUES ARE IN μF. ($p=10^{-6}\mu F$)
3. VOLTAGE READINGS TO COMMON GROUND ARE MEASURED WITH V.T.V.M. UNDER NO SIGNAL.
4. THIS SCHEMATIC DIAGRAM MIGHT BE MODIFIED WITH DEVELOPMENT OF TECHNOLOGY.

IC-VOLTAGE

IC NO. \ PIN NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101 IC102 (V)	1.1	0.7	33.5	14	0											
IC103 (V)	1.4	3.4	1.4	0.9	0	2.7	0	0	0							
IC104 (V)	0.4	0	0	-1.3	-29	0	0	29	29	0	0	-29	-1.3	0	0	0.4

EXPLODED VIEW



PARTS LIST

Key No.	Ref.No.	PARTS No.	DESCRIPTION	Q'ty
			PACKAGE PARTS	
		R-4774617	Instruction book	1
			Polyethylene bag, 160x240, Instruction book	1
		R-4172992	Styro-foam cushion, Right side	1
		R-4172993	Styro-foam cushion, Left side	1
		R-357515	Polyethylene bag, Set	1
		R-4172995	Sheet, Set	1
		R-4773695	Guarantee card	1
		R-4774618	Label, Caution	1
		R-4774619	Specification sheet	1
		R-4774634	Coller label, Black	1
		R-4774634-L	Coller label, Silver	
		R-4075261	Individual carton	1
			CABINET APPEARANCE PARTS	
1		R-317608	Front panel, Silver	1
1		R-317608-L	Front panel, Black	
			Screw, Flat Hd., 3x8 B-tight	3
			Screw, Pan., Hd., 3x8 B-tight	2
2		R-A75657	Top case, Silver	1
2		R-A75658	Top case, Black	
3		R-A75550	Top cover assembly, Silver	1
3		R-A75551	Top cover assembly, Black	
			Screw, Pan Hd., with washer, 3x6 B-tight, Silver	4
			Screw, Pan Hd., with washer, 3x6 B-tight, Black	
4		R-1272779	Bottom cover	1
			Screw, Bind Hd., 3x6 B-tight	7
5		R-S872150	Foot base assembly	4
			Screw, Oval Hd., 3x6 B-tight	4
6		R-3973913	Knob, BASS/TREBLE/BALANCE, Silver	3
6		R-3973913-L	Knob, BASS/TREBLE/BALANCE, Black	
7		R-3973914	Knob, VOLUME, Silver	1
7		R-3973914-L	Knob, VOLUME, Black	
8		R-3973912	Knob, FUNCTION, Silver	7
8		R-3973912-L	Knob, FUNCTION, Black	
9		R-3973342	Knob, POWER, Silver	1
9		R-3973342-L	Knob, POWER, Black	
30		R-4171489	Cushion	7
			CHASSIS MECHANICAL PARTS	
10		R-1272757	Chassis, Front	1
			Screw, Pan Hd., 3x6 B-tight	2
			Screw, Bind Hd., 3x6 B-tight	2
11		R-1272758	Chassis, Right	1
			Screw, Flat Hd., 3x6 S-tight	4
12		R-1272759	Chassis, Left	1
			Screw, Flat Hd., 3x6 S-tight	4
13		R-1272760	Chassis, Center	1
			Screw, Bind Hd., 3x6 B-tight	2
14		R-1272761A	Chassis, Rear	1
			Screw, Bind Hd., 3x6 B-tight	4
			Screw, Pan Hd., 3x6 B-tight	2
			Screw, Pan Hd., 3x8 B-tight	6
			Screw, Pan Hd., 2x10	4
			Nut, Hex Hd., M2	4
15		R-2672722	Heat sink, Power IC	1
			Screw, Bind Hd., 3x8 B-tight	4
16		R-277723	Heat sink, IC	1
			Screw, Bind Hd., 3x8 B-tight	4
			Screw, Bind Hd., 3x14 B-tight	2
17		R-1272770	Metal bracket, Power switch	1
			Screw, Bind Hd., 3x6	2
18		R-1272771	Lever, Power switch	1
19		R-1272883	Shield case	1
			Screw, Pan Hd., 3x6 B-tight	2
20		R-1272884	Shield case, EQ	1
21		R-277449	Heat sink	1
			Screw, Pan Hd. with flat washer, 3x8	1
22		R-1272778	Metal bracket, MIC jack	1
			Screw, Pan Hd., 3x6 B-tight	1
23		R-4172996	Fiber sheet, Terminal	1
24		R-367271	Sheet, P.C.B.	1
			Screw, Pan Hd. with washer, 3x6 B-tight	3
25		R-1570437	Earth terminal	1
26		R-1272769	Metal bracket, Transformer	1
27		R-1272885	Shield case, Transformer	1
			Screw, Pan Hd., 3X6 B-tight	4
		R-367266	Cover, Capacitor	1
28		R-367273	Sheet, AC cord	1
29		R-367274	Sheet, Shield case	1
			Screw, Pan Hd., 3x8	2
			Panel - LED P.C.B.	
			Screw, Pan Hd., 3x6 Chassis -P.C.B.	2
48		R-377070	Bushing, AC cord.	1
			CHASSIS ELECTRICAL PARTS	
47		R-S37089-1	AC cord	1
		R-S17447	Connector	1
31	S1	R-S47328-2	Push switch, Power	1
			Screw, Pan Hd., 3x6	2
32		R-S17360	Terminal board	1
33		R-S27438	Jack, H. PHONE	1
34		R-S27458	Jack, FM/CR	2
35		R-W77982	Power transformer	1
			Screw, Pan Hd. with spring Washer, 4x8	4
			Nut, Hex Hd., M4	4
36		R-S17411-1	Terminal board	2
37		R-S17410-1	Terminal board	1
	CS1,4	R-S27298-3	Housing, 3P	2
	CS2	R-S27298-7	Housing, 7P	1
	CS3,6	R-S27298-6	Housing, 6P	2
	CS5	R-S27298-4	Housing, 4P	1
	CS7,8,9,10	R-S27298-2	Housing, 2P	4
		R-247755	Terminal	36
	CP6	R-S27260-6	Plug, 6P	1
	F1,2	R-S17286	Fuse, T3.15A	2
	F3,4	R-S17191	Fuse, T800mA	2
	F5,6	R-S17185	Fuse, T2A	2
38		R-4172945-3	Printed circuit board, SW (TOP)	1
39		R-4172946	Printed circuit board, LED IND	2
40	S2 ~ 9	R-S47659	Push switch, FUNCTION	1
			SEMICONDUCTORS	
			LED, SLP144B	1
			LED, SLP256B	1
			CAPACITORS	
	C26		Metalized polyester film, 0.047 μF, ±10%, 250V, VDE	1
			MAIN P.C.B. ASSEMBLY	
41		R-A75552	Circuit board assembly, Main	1
		R-S17024	Fuse clip	12
42	VR101,102, 201,201	R-R1167201	Variable resistor, 100 k ohm-B, BASS/TREBLE	2
43	VR103,203	R-R1167200	Variable resistor, 100 k ohm-M, N, BALANCE	1
44	VR104,204	R-R1167335	Variable resistor, 100 k ohm-K, MASTOR	1
	CP8,9,10	R-S27207-2	Plug, 2P	3
			SEMICONDUCTORS	
	IC103		Integrated circuit, TA7324P	1

NOTES : 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.

PARTS LIST

Key No.	Ref.No.	PARTS No.	DESCRIPTION	Q'ty
	IC104		Integrated circuit, STK461	1
	Q101,102,201,202		Transistor, 2SC1570	4
	Q103		Transistor, 2SD313	1
	D1		Diode, DBA30C	1
	D2		Diode, DBA10C	1
	D3		Diode, SM-1 or DS135	1
	D4		Diode, EQB-01-35E	1
	D5		Diode, 1S1588	1
			RESISTORS	
			(Resistors are of carbon type, ±5%, allowance and 1/4W unless otherwise noted.)	
	R3		15 k ohm	1
	R4,115,118,215,218		10 k ohm	5
	R5		270 k ohm	1
	R6,119,219		220 k ohm	3
	R7,112,212		470 k ohm	3
	R111,211		1 M ohm	2
	R113,121,124,213,221,224		5.6 k ohm	6
	R114,214		100 k ohm	2
	R116,216		18 k ohm	2
	R15,117,217		2.2 k ohm	3
	R120,127,220,227		33 k ohm	4
	R123,223		330 k ohm	2
	R122,129,222,229		1 k ohm	4
	R125,130,225,230		3.3 k ohm	4
	R126,128,226,228		330 ohm	4
	R131,231		33 k ohm	2
	R1,9		Carbon, 10 ohm, ±10%, 1/2W, (Fuse type)	2
	R10,11,12		Carbon, 100 ohm, ±10%, 1/4W, (Fuse type)	3
	R2		Metal oxide film, 2.2 k ohm, ±5%, 2W	1
	R8		Metal oxide film, 2.2 k ohm, ±5%, 1W	1
	R13		Metal oxide film, 1.2 k ohm, ±5%, 2W	1
	R133,233		Metal oxide film, 10 ohm, ±5%, 1W	2
	R14		Solid, 2.7 k ohm, ±5%, 1/2W	1
	R132,232		Cement, 0.47 ohm, ±10%, 3W	2
			CAPACITORS	
	C1,2,3,4,7,8,10		Mylar, 0.01 μF, ±20%, 100V	7
	C111,113,119,211,213,219		Mylar, 0.047 μF, ±10%, 50V	6
	C112,212		Mylar, 0.0012 μF, ±10%, 50V	2
	C125,225		Mylar, 0.047 μF, ±20%, 50V	2
	C12,14		Ceramic, 0.01 μF, ±20%, 50V	2
	C17,18		Ceramic, 0.04 μF, ±20%, 50V	2
	C109,209		Ceramic, 470pF, ±10%, 50V	2
	C115,215		Ceramic, 68pF, ±10%, 50V	2
	C118,218		Ceramic, 270pF, ±10%, 50V	2
	C121,221		Ceramic, 180pF, ±10%, 50V	2
	C123,223		Ceramic, 8pF, ±10%, 50V	2
	C5,6		Electrolytic 3300 μF/35V	2
	C9		Electrolytic 470 μF/63V	1
	C11,20,21,22,23,24,25		Electrolytic 100 μF/50V	7
	C13		Electrolytic 1000 μF/35V	1
	C16		Electrolytic 10 μF/16V	2
	C110,210		Electrolytic 10 μF/50V	2
	C114,120,214,220		Electrolytic 4.7 μF/35V	4
	C116,122,216,222		Electrolytic 220 μF/6.3V	4
	C117,217		Electrolytic 4.7 μF/50V	2
	C124,224		Electrolytic 47 μF/35V	2
	FUNCTION P.C.B. ASSEMBLY			
45		R-A75553	Circuit board assembly, Function	1
	CP1,4	R-S27207-3	Plug, 3P	2
	CP2	R-S27207-7	Plug, 7P	1
	CP3	R-S27207-6	Plug, 6P	1
	CP5	R-S27207-4	Plug, 4P	1
	CP7	R-S27207-2	Plug, 2P	1
			SEMICONDUCTORS	
	IC101,102		Integrated circuit, ML120	2
			RESISTORS	
			(Resistors are of carbon type, ±5%, allowance and 1/4W unless otherwise noted.)	
	R101,201		56 k ohm	2
	R102,202		1 k ohm	2
	R103,108,203,208		4.7 k ohm	4
	R104,204		120 ohm	2
	R105,205		6.8 k ohm	2
	R106,206		91 k ohm	2
	R107,207		150 k ohm	2
	R109,209		1 M ohm	2
	R110,210		150 k ohm	2
			CAPACITORS	
	C102,202		Ceramic, 270pF, ±10%, 50V	2
	C104,204		Mylar, 0.011 μF, ±5%, 50V	2
	C105,205		Mylar, 0.039 μF, ±5%, 50V	2
	C107,207		Mylar, 0.082 μF, ±10%, 50V	2
	C101,201		Electrolytic 2.2 μF/50V	2
	C103,203		Electrolytic 68 μF/6.8V	2
	C106,206		Electrolytic 2.2 μF/50V	2
	C108,208		Electrolytic 0.47 μF/50V	2
	HEAD PHONE P.C.B. ASSEMBLY			
46		R-A75554	Circuit board assembly, Head phone	1
			RESISTORS	
	R134,234		Metal oxide film, 220 ohm, ±5%, 1W	2

NOTES : 1. Part orders must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and/or resistors must be multiple of 10 pcs.